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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,954

04/07/2006

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01/14/2009

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EXAMINER

CHAUDRY, ATIF H

ART UNIT

PAPER NUMBER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,954	Applicant(s) SUGANUMA ET AL.	
	Examiner ATIF H. CHAUDRY	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8 and 10-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the claims

Applicant's amendment as filed on 10/22/08 has been entered. The amendment cancelled claims 2 and 9 and amended claims 1 and 8. Currently claims 1, 3-8, and 10-13 are pending in this application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 4-8, and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghate (US Patent 5016817) in view of Laverdiere (US PG Pub 20050173003).

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4. Regarding claims 1 and 8, Ghate (Fig. 2, 4) discloses a liquid supply apparatus for and illustrates a method of supplying an additive liquid to a primary fluid comprising of a supply section having a supply liquid tube 154, and primary section comprising a primary circulation tube 98. In operation, the supply section fluid must inherently have larger pressure than the primary section in order to inject the additive liquid into the primary fluid. Ghate discloses pressure regulators 90 and 94 to regulate the pressure of the supply section and primary fluid section. Ghate (column 3 line 10) discloses the diameter of the supply section tube at .75 mm. Ghate fails to disclose a hollow fiber shape circulation tube. Laverdiere (page 7, 2nd column, lines 30-35) teaches a fluid flow controller using hollow fiber tube to regulate pressure drops and thus control the flow rate. It would have been obvious to a person of ordinary skill in the art to have provided the mixing device disclosed by Ghate with hollow fiber tube as taught by Laverdiere in order to enable pressure and flow control.

5. Claims 4-7 and 10-13 do not add any new elements except for defining optimum ranges of flow rate, concentration ratio, or pressure ratio. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the claimed optimum ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233

6. Claims 1, 4-8, and 10-13 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Ghate (US Patent 5016817) in view of Kumano et al. (US PG Pub 20060144777).

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7. Regarding claims 1 and 8, Ghate (Fig. 2, 4) discloses a liquid supply apparatus for and illustrates a method of supplying an additive liquid to a primary fluid comprising of a supply section having a supply liquid tube 154, and primary section comprising a primary circulation tube 98. In operation, the supply section fluid must inherently have larger pressure than the primary section in order to inject the additive liquid into the primary fluid. Ghate discloses pressure regulators 90 and 94 to regulate the pressure of the supply section and primary fluid section. Ghate (column 3 line 10) discloses the diameter of the supply section tube at .75 mm. Ghate fails to disclose a hollow fiber shape circulation tube. Kumano et al. (page 5, para 47) teaches using hollow fibers for optimizing pressure in fluid flow. It would have been obvious to a person of ordinary skill in the art to have provided the mixing device disclosed by Ghate with hollow fiber material for tubing as taught by Kumano et al. in order to provide a convenient method of pressure and flow control.

8. Claims 4-7 and 10-13 do not add any new elements except for defining optimum ranges of flow rate, concentration ratio, or pressure ratio. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the claimed optimum ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghate (US Patent 5016817) in view of Laverdiere (US PG Pub 20050173003) alone or further in view of Shirakashi (US PG Pub 20040206634).

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10. Ghaté fails to disclose ultrapure water or electrolytic solution. Shirakashi (page 1, para006; page 10 para 119) teaches a method of reducing dielectric breakdown in chemical-mechanical polishing caused by ultrapure water cleaning by mixing of electrolytic solutions with ultrapure water in order to reduce the specific resistance of ultrapure water. It would have been obvious to a person of ordinary skill in the art to have used the device disclosed by Ghaté for mixing any liquids including electrolytic solution and ultrapure water. Alternatively, it would have been obvious in view of Shirakashi to use the Ghaté system to mix electrolytic solution and ultrapure water.

Response to Arguments

11. Applicant's arguments filed 10/22/08 have been fully considered but they are not persuasive. Regarding Applicants arguments that "in the liquid supply method of Ghaté, the concentration of the liquid mixture is controlled by a feedback control method" since it would have been obvious to a person having ordinary skill in the art to have used the hollow fiber tubing as an additional or alternative pressure/flow control method since using controlling pressure drop across hollow fiber tubes is well known as taught by Kumano et al. (page 5, para 47).

12. Regarding Applicants arguments that "the Laverdiere reference merely discloses a method of controlling the amount of liquid, but does not disclose a method of supplying and mixing a supply liquid to a primary fluid" since Ghaté is being relied upon to show supplying and mixing a supply liquid to a primary fluid and Laverdiere is being cited only to show incorporation of hollow fiber tubes to control pressure drop in the fluid (even though the claims do not recite determining the supply quantity, it is noted that

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using pressure drop to control flow rate is well known in the art), it would have been obvious to a person having ordinary skill in the art to have used the hollow fiber tubing as an additional or alternative pressure/flow control method since using controlling pressure drop across hollow fiber tubes is well known as taught by Laverdiere (page 7, 2nd column, lines 30-35).

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ATIF H. CHAUDRY whose telephone number is (571)270-3768. The examiner can normally be reached on Mon-Fri Alternate Friday off 9-5 EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Huson can be reached on (571)272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Atif H Chaudry/
Examiner, Art Unit 3753

/Stephen M. Hepperle/
Primary Examiner, Art Unit 3753

1/2/2009